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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,020	01/16/2004	Charles J. Davidson	S63.2N-12024-US05	5771

23552 7590 12/20/2006  
MERCHANT & GOULD PC  
P.O. BOX 2903  
MINNEAPOLIS, MN 55402-0903

EXAMINER
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ISABELLA, DAVID J

ART UNIT	PAPER NUMBER
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3738

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/20/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/758,020

**Applicant(s)**

DAVIDSON ET AL.

**Examiner**

DAVID J. ISABELLA

**Art Unit**

3738

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12 and 23-37 is/are pending in the application.
- 4a) Of the above claim(s) 29-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12 and 23-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

The Amendment filed 8/30/2006 has been entered. Claims 1-11 and 13-22 have been canceled, and new claims 29-37 have been added.

Newly submitted claims 29-37 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: these claims are directed to a method for positioning a stent having a side opening. The method does not require the specifics of the stent as set forth in the system of claim 12.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 29-37 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

All pending claims 12,23-28 are being considered for further examination on the merits.

***Priority***

The claims receive priority benefit of parent application 09/669,060 filed September 22, 2000. The claims do not receive priority benefit of provisional application 60/155,611 filed September 23, 1999 because they are not fully supported by the provisional application. The effective filing date of the claims is September 22, 2000.

Applicant failed to provide specifics regarding the application being identical or the subject matter being fully supported by the earlier filed applications, specifically, the provisional application (60/155,611).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12, 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Von Oepen in view of O'Connor (6398792 as cited in applicant's IDS), Solomon (5846204) and Jang et al (USPN 5,749,848 as cited in applicant's IDS).

Von Oepen discloses a stent delivery system for use in a body lumen with all the elements of the claim, but is silent to an ultrasound transducer being disposed near the catheter body distal end. See Figure 3 for catheter (30) comprising a catheter body having a distal end, proximal end, a longitudinal axis and a lumen, an expansion device (balloon) disposed near the catheter body distal end, and a stent (20) disposed over the expansion device. See Figure 2 and column 2, lines 66-67 for the stent (20) having a wall comprising struts and connectors forming multiple passageways (21) and further comprising a side hole (22) that is adapted to provide access to a side branch.

O'Connor teaches a ultrasonic catheter system, which includes an ultrasound

transducer. While the transducer is used for treatment of the vascular system, it is known in the art to use the transducer for location application as taught by Jang et al. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the stent delivery system of Von Oepen to include an ultrasound imaging transducer disposed inside the expansion device in order to determine exactly where the diseased segment of the blood vessel begins and ends and to correctly position the stent such that the side hole is positioned at the ostium of a branch vessel. This would replace the completely separate x-ray contrast means and x-ray screen for visual monitoring used by Von Oepen for positioning the side hole, thus simplifying the procedure. The examiner contends that use of this ultrasound transducer instead of x-ray will provide the surgeon with more accurate, informative and controllable images of the diseased vessels for side hole positioning.

Von Oepen, as modified by O'Connor, discloses a stent delivery system with all the elements of claim 12, including a transducer housing coupled to the transducer, the housing having distal and proximal ends and a passage through the housing between the ends, and a positioning guidewire at least partially disposed in the catheter lumen and passing through the transducer housing passage. Solomon teaches, in Figure 1, a rotatable ultrasound catheter (100) with a transducer housing for imaging. A guidewire is accepted through the passage (114) in order to prevent unintended deflection of the transducer as it is rotated around the guidewire for three-dimensional imaging. See column 5, lines 1-14. Because the guidewire sleeve portion (108) is *integral with* the housing portion (104), the transducer housing is rightfully interpreted as including both

portions (104 and 108) (column 5, lines 19-22). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to look to the teachings of O'Connor and/or Solomon to modify the stent delivery system of Von to include a transducer housing with a passage coupled to the transducer and a guidewire disposed in the passage. This ensures that the ultrasound transducer travels in a predetermined path around the guidewire maintained in the passage, which is configured to maintain the planar surface of the transducer substantially parallel with a portion of the guidewire that is located within the passage. The imaging device with transducer can be positioned directly over the guidewire through the passage and advantageously reduce operating time.

### ***Response to Arguments***

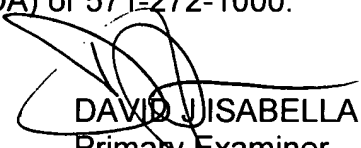
Applicant's arguments filed April 2, 2004 have been fully considered but they are not persuasive. See the rejections, *supra*, for interpretation of the prior art references.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID J. ISABELLA whose telephone number is 571-272-4749. The examiner can normally be reached on MONDAY-FRIDAY.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CORRINE MCDERMOTT can be reached on 571-272-4754. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



DAVID J. ISABELLA  
Primary Examiner  
Art Unit 3738

DJI  
12/5/2006